High-Mu Triode—Sharp-Cutoff Pentode

9-PIN MINIATURE TYPE

For Sync-Separator and Noise-Immune Gated-AGC-Amplifier Applications in Color and Black-and White TV Receivers

GENERAL DATA

Electrical:

Heater Characteristics and Ratings:

Voltage (AC or DC) . . .	6.3[a]	6.3 ± 0.6	volts
Current.	0.600 ± 0.040	0.600[b]	amp
Warm-up time (Average) .	11	–	sec

Peak heater-cathode voltage (Each unit):

Heater negative with respect to cathode	200 max.	volts
Heater positive with respect to cathode	200[c] max.	volts

Direct Interelectrode Capacitances:[d]

Triode Unit:

Grid to plate.	2.2	pf
Grid to cathode & pentode grid No.3 & internal shield, and heater	2.8	pf
Plate to cathode & pentode grid No.3 & internal shield, and heater	2.2	pf

Pentode Unit:

Grid No.1 to plate	0.1 max.	pf
Grid No.1 to cathode, triode cathode & grid No.3 & internal shield, grid No.2, and heater	10.0	pf
Grid No.3 & triode cathode & internal shield to plate . .	3.4	pf
Grid No.1 to grid No.3 & triode cathode & internal shield	0.36	pf
Grid No.3 & triode cathode & internal shield to plate, cathode, grid No.2, grid No.1, and heater.	12.5	pf

Characteristics, Class A_1 Amplifier:

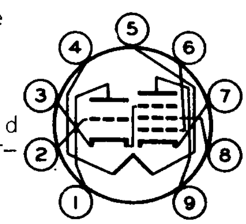
	Triode Unit	*Pentode Unit*	
Plate Supply Voltage	200	150	volts
Grid No.3.	–	e	

	Triode Unit	Pentode Unit	
Grid-No.2 Supply Voltage	–	100	volts
Grid-No.1 Voltage	–2	–	volts
Grid No.1	–	e	
Cathode Resistor	–	180	ohms
Amplification Factor	70	–	
Plate Resistance (Approx.)	17500	100000	ohms
Transconductance, Grid No.1 to Plate	4000	4400	μmhos
Transconductance, Grid No.3 to Plate[f]	–	600	μmhos
Plate Current	4	4	ma
Grid-No.2 Current	–	2.8	ma
Grid-No.1 Supply Voltage (Approx.) for plate μa = 10	–5	–	volts
20	–	–4	volts
Grid-No.3 Supply Voltage (Approx.) for plate μa = 20[f]	–	–7	volts

Mechanical:

Operating Position	Any
Type of Cathodes	Coated Unipotential
Maximum Overall Length	2-5/8"
Maximum Seated Length	2-3/8"
Length, Base Seat to Bulb Top (Excluding tip)	2" ±3/32"
Diameter	0.750" to 0.875"
Dimensional Outline	See *General Section*
Bulb	T6-1/2
Base	Small-Button Noval 9-Pin (JEDEC No.E9-1)
Basing Designation for BOTTOM VIEW	9QY

Pin 1 – Triode Plate
Pin 2 – Triode Grid
Pin 3 – Triode Cathode, Pentode Grid No.3, Internal Shield
Pin 4 – Heater
Pin 5 – Heater



Pin 6 – Pentode Grid No.1
Pin 7 – Pentode Cathode
Pin 8 – Pentode Grid No.2
Pin 9 – Pentode Plate

GATED AGC AMPLIFIER & NOISE INVERTER

Pentode Unit

Maximum Ratings, *Design-Maximum Values:*

For operation in a 525-line, 30-frame system[g]

DC PLATE VOLTAGE	300 max.	volts
PEAK POSITIVE-PULSE PLATE VOLTAGE[h]	600 max.	volts

GRID-No.3 (CONTROL-GRID) VOLTAGE:		
Negative-bias value	100 max.	volts
Positive-bias value	0 max.	volts
GRID-No.2 (SCREEN-GRID) SUPPLY VOLTAGE	300 max.	volts
GRID-No.2 VOLTAGE	See *Grid-No.2-Input Rating Chart* at front of Receiving Tube Section	
GRID-No.1 (CONTROL-GRID) VOLTAGE:		
Negative-bias value	50 max.	volts
Positive-bias value	0 max.	volts
GRID-No.2 INPUT:		
For grid-No.2 voltages up to 150 volts	1.1 max.	watts
For grid-No.2 voltages between 150 and 300 volts	See *Grid-No.2-Input Rating Chart* at front of Receiving Tube Section	
PLATE DISSIPATION	2 max.	watts

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:		
For fixed-bias operation	0.5 max.	megohm
For cathode-bias operation	1 max.	megohm

AMPLIFIER — Class A_1

Triode Unit

Maximum Ratings, *Design-Maximum Values:*

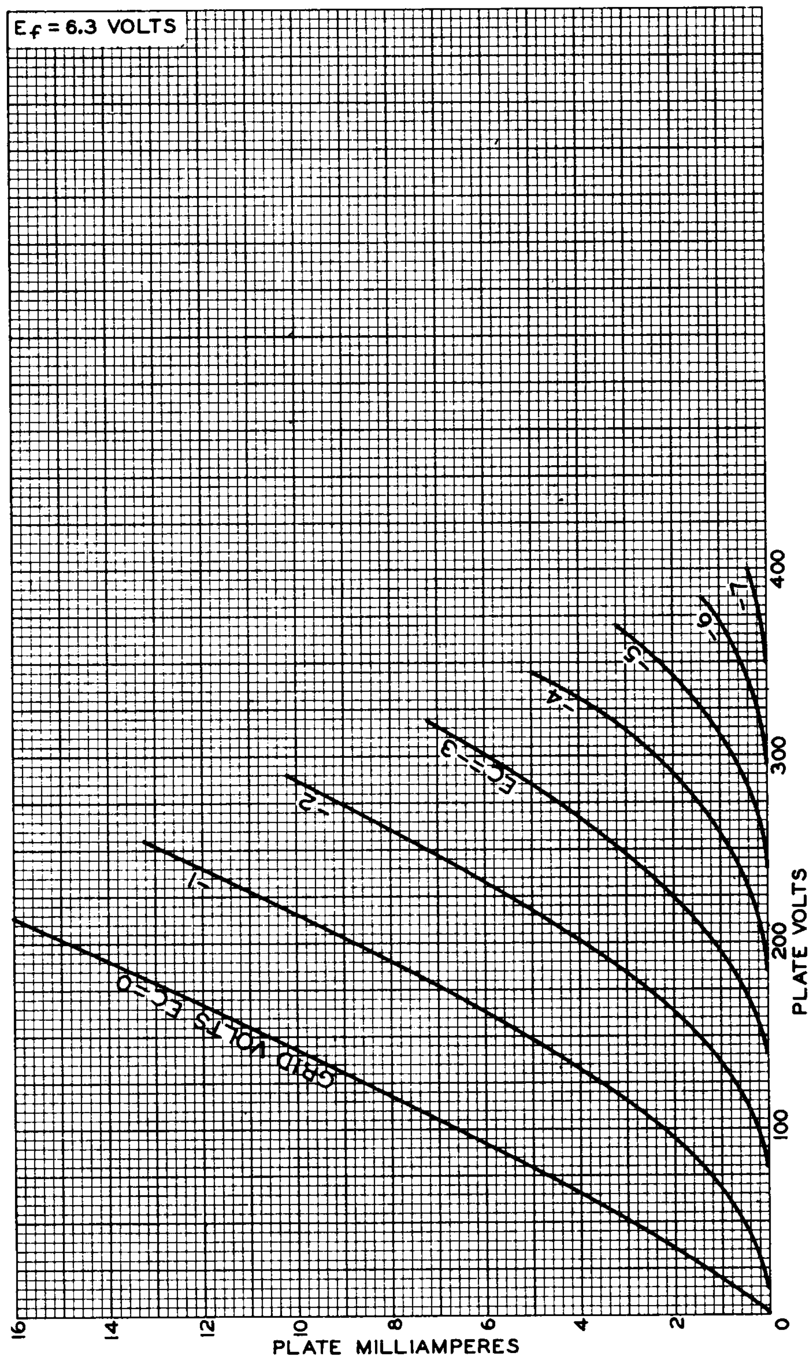
PLATE VOLTAGE	300 max.	volts
GRID VOLTAGE:		
Negative-bias value	50 max.	volts
Positive-bias value	0 max.	volts
PLATE DISSIPATION	1.1 max.	watts

Maximum Circuit Values:

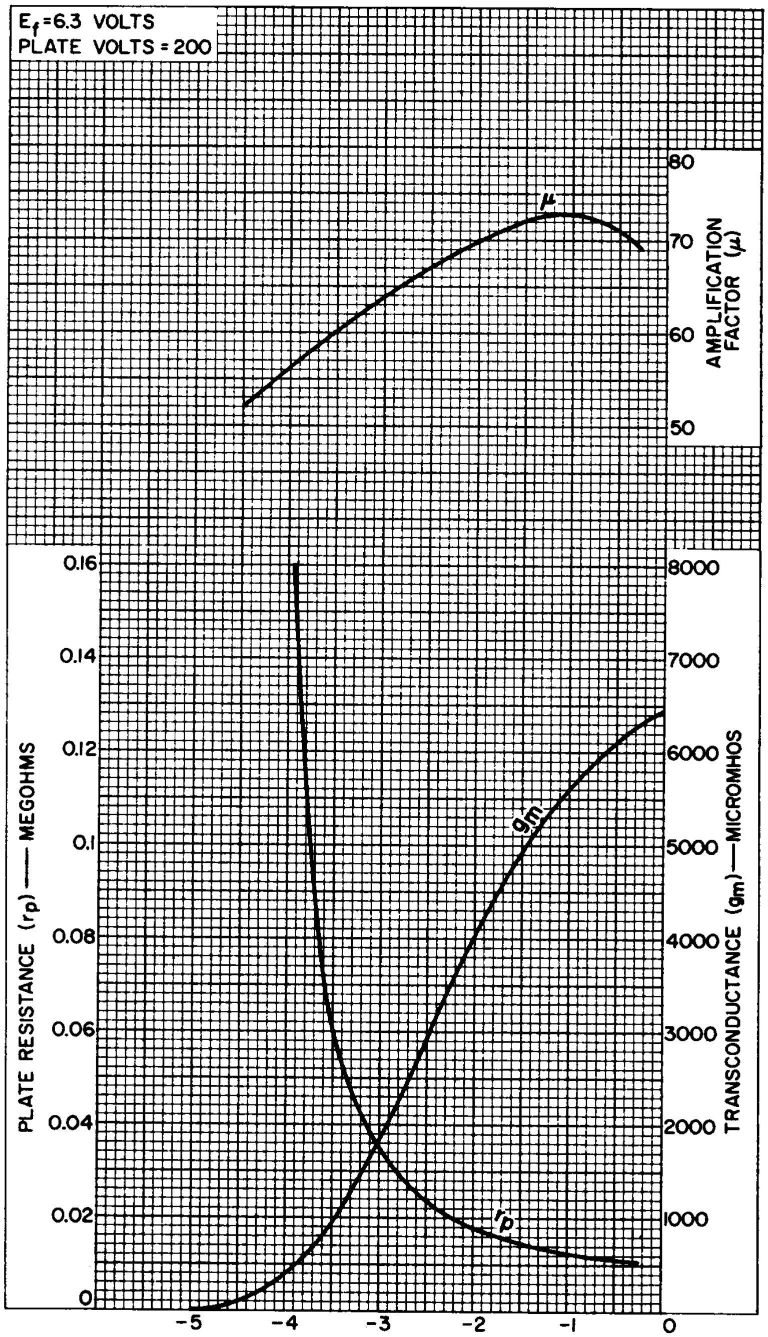
Grid-Circuit Resistance:		
For fixed-bias operation	0.25 max.	megohm
For cathode-bias operation	1 max.	megohm

[a] At heater amperes = 0.600.
[b] At heater volts = 6.3.
[c] The dc component must not exceed 100 volts.
[d] Without external shield.
[e] Connected to negative end of cathode resistor.
[f] With no external connection to triode plate and triode grid.
[g] As described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations," Federal Communications Commission.
[h] This rating is applicable when the duration of the voltage pulse does not exceed 15 per cent of one horizontal scanning cycle. In a 525-line, 30-frame system, 15 per cent of one horizontal scanning cycle is 10 microseconds.

AVERAGE PLATE CHARACTERISTICS
Triode Unit

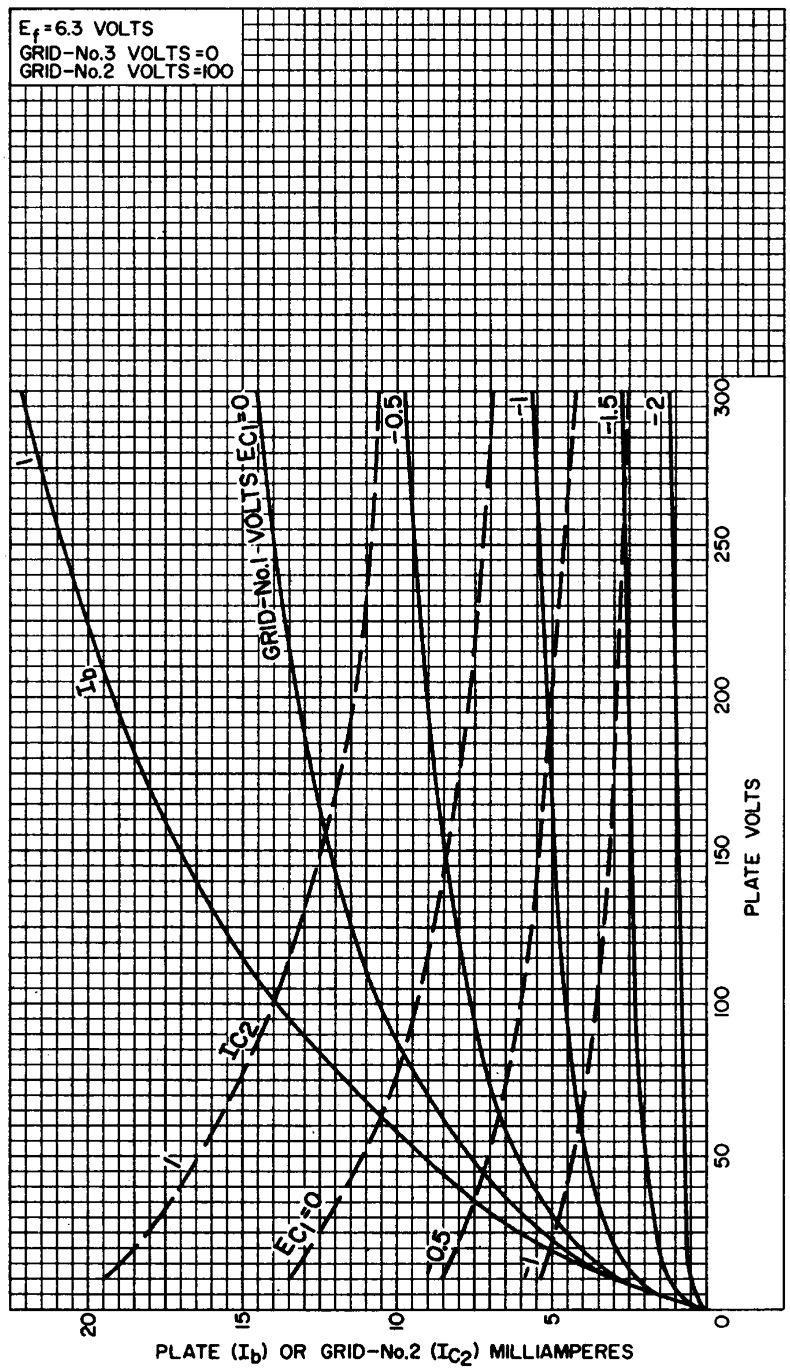


AVERAGE CHARACTERISTICS
Triode Unit



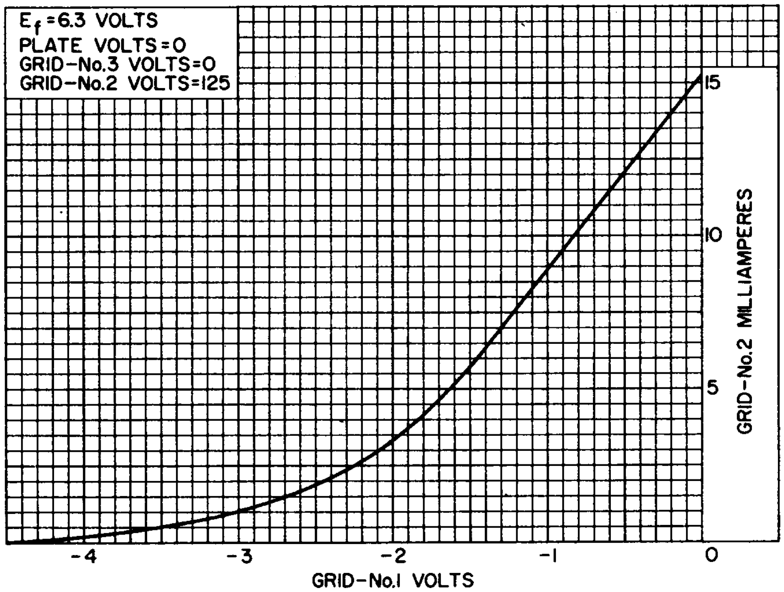
92CM-8647

AVERAGE CHARACTERISTICS
Pentode Unit



92CM-11594

AVERAGE CHARACTERISTICS
Pentode Unit



92CS-11603